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June 10, 2005

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## **IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: <i>Francisco et al.</i>		
Serial No.: 09/724,406		Group Art Unit: 1642
Filed: November 28, 2000		Examiner: Yu, Misook
For:	RECOMBINANT ANTI-CD30 ANTIBODIES AND USES THEREOF	

## **AFFIDAVIT OF ALAN WAHL UNDER 37 CFR § 1.132**

Mail Stop Amendment  
Commissioner for Patents  
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Sir:

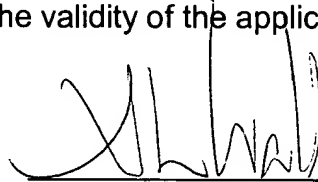
I, Alan Wahl, do declare and state that:

1. I am a citizen of the United States residing at 6150 East Mercer Way, Mercer Island Washington, 98040
2. I am an inventor of invention described and claimed in the above identified patent application Serial No. 09/724,406.

3. From 1998 to the present, I have been at Seattle Genetics, Inc., assignee of the above identified application, initially as Director of Biochemistry from 1998 to 2000 and presently as Senior Director, Molecular Oncology and Immunology.
4. My academic and technical experience and honors, and a list of my publications are set forth in my curriculum vitae, attached hereto as Exhibit 1.
5. I have reviewed Pohl *et al* (1993, *CD30-specific AB1-AB2-AB3 Internal Image Antibody Network: Potential Use as Anti-Idiotypic Vaccine Against Hodgkin's Lymphoma*, Int. J. Cancer, vol. 54, pages 418-425).
6. Upon my review of Pohl *et al*, Pohl *et al* does not show an antibody that exerts a cytostatic or cytotoxic effect on the Hodgkin's Disease cell line in the absence of cells other than cells of said Hodgkin's Disease cell line as recited in claims 1, 8, 11, or 67 of the instant application.
7. It is known to one of ordinary skill in the art that not all naked antibodies have direct cytostatic or cytotoxic properties.
8. Pohl *et al* discuss the possible preventative effects of pretreatment of SCID mice with 4A4 or HRS-4. (Pohl *et al.*, page 422, right hand column, first full paragraph). The SCID mice have functioning natural killer (NK) cell activity. Pohl *et al*, pg 422, right column, lines 12-14.
9. Pohl *et al* describes how any possible prevention of tumor growth utilizing antibody HRS-4 required the presence of cells other than cells of the Hodgkin's Disease cell line.
  - a. The antibody HRS-4 may be efficient in the "prevention of tumor growth" due to an NK-cell-mediated mechanism. Pohl *et al*, page 422, right column, lines 47-50. In the absence of NK cells, HRS-4 permitted tumor growth. Pohl *et al*, page 422, right column, lines 34-38.
10. Pohl *et al* describes how any possible prevention of tumor growth utilizing antibody 4A4 required the presence of cells other than cells of the Hodgkin's Disease cell line.

- a. The antibody 4A4 may "*prevent* the growth of solid CD30+ (L540)-cell tumors" due to complement/effector cells being present. Pohl *et al*, pg 422, right column, lines 44-47 and Figures 8 and 9.
11. Pohl et al describes how any possible use of antibodies 9210 or 14G9 in an anti-idiotypic vaccine would required the presence of immune response cells other than cells of the Hodgkin's Disease cell line.
- a. In order for the Ab2 antibodies 9210 or 14G9 to work in a vaccine-like approach to produce an anti-anti-idiotypic Ab3 antibody, the presence of an active immune system in the form of B cells and T cells is required.
12. I declare further that all statements made in this Declaration of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 6/10/05



Alan Wahl

Attachments:

Exhibit 1: Curriculum Vitae of Alan Wahl

## CURRICULUM VITAE

NAME: Alan Francis Wahl

ADDRESS: 6150 East Mercer Way  
Mercer Island WA, 98040  
(206) 232-2783 (h)  
(425) 527-4610 (w)  
email: westwahl@comcast.net



### EDUCATION: INSTITUTION

### DEGREE

### YEAR

University of Rochester  
Rochester, NY

Ph.D. Biochemistry  
& Biophysics

1986

University of Rochester  
Rochester, NY

M.S. Biochemistry  
& Biophysics

1984

Rochester Institute of  
Technology, Rochester, NY

B.S. Biology/Chemistry  
*cum laude*

1978

### PROFESSIONAL EXPERIENCE:

**2000-present** Senior Director, Molecular Oncology and Immunology  
Seattle Genetics, Inc., Bothell, WA 98021

Areas of Scientific Excellence: Discovery and preclinical development of targeted biologics and small molecules for treatment of cancer and immunologic diseases. Identified numerous preclinical candidates, and lead or guided preclinical IND teams for Seattle Genetics' drugs currently in development or in clinical trials. Responsible for a strong in-house discovery/ development pipeline.

**1998-2000** Director, Biochemistry and Tumor Biology  
Seattle Genetics, Inc., Bothell, WA 98021

Responsibilities: Established core competencies in tumor cell biology, immunology and experimental therapeutics for drug discovery and development. Directly organized, staffed and grew biology drug discovery and experimental therapeutics. Helped staff and shape Clinical, Development, Chemistry and Preclinical Development capabilities for the newly formed company. Lead preclinical discovery and development teams, and represented their skill and accomplishments to the company, investors and collaborators.

**1997-1998** Principal Scientist  
Department of Immunology  
Zymogenetics Inc. Seattle WA 98102

Research Areas: Discovery and early stage development of biomolecules for treating immunologic diseases. Established immunologic / biochemical and tumor cell-based screens to detect signal transduction, proliferation and activation control of leukocytes and tumor cells.

**1996-97 Principal Scientist and Group Leader**  
**1992-1996 Senior Research Investigator II**

Department of Inflammation, Bristol-Myers Squibb Pharmaceutical Research Institute,  
Seattle WA, 98121

Research Areas: Mechanisms of apoptosis, proliferation and cell cycle control of leukocytes and neoplastic cells. Small molecule and biomolecule drug discovery for treatment of cancer and autoimmune diseases. Lead Scientist for development of proprietary cytokine clinical candidate for treatment of inflammatory diseases.

Management Areas: Responsible for evaluations and review of research of seven staff scientists and associates and for management review of external proposals to corporation. Participated in site visits for potential company or technology acquisitions. Direct reporting to V.P. Inflammation and Immunology. Responsible for departmental reporting to corporate Drug Discovery Management Team.

**1991-1992 Senior Research Investigator, Antitumor Cellular and Molecular Biology.**  
**1989-1991 Research Investigator**

Bristol-Myers Squibb Pharmaceutical Research Institute, Wallingford, CT

Research Areas: Mechanism of anti-cancer drug action, platinol and taxane analog programs. Contributing scientist to TAXOL and Carboplatin programs. Enzymology of gene amplification and mechanisms of drug resistance in neoplasia.

Director: Core Facility for Synthetic Biomolecules, Bristol-Myers Squibb PRI, Wallingford, CT

#### **POSTDOCTORAL TRAINING**

**1986-1989**

Stanford University School of Medicine, Stanford, CA  
Laboratory of Experimental Oncology, Department of Pathology  
Advisors: Drs. T.S.-F. Wang and D. Korn

Research Area: Protein/DNA interactions during DNA replication in normal and neoplastic cell proliferation. Cloning, transcriptional regulation and cell cycle analysis of human DNA polymerase  $\alpha$ .

#### **GRADUATE RESEARCH**

**1981-1986**

University of Rochester, Rochester, NY  
Department of Biochemistry & Biophysics and The Cancer Center  
Thesis Advisors: Drs. R.A. Bambara and E.M. Lord

Research Area: Purification, physicochemical characterization and enzymology of eukaryotic DNA dependent ATPases and replicative DNA polymerases. Cell fusion and monoclonal antibody production.

Thesis: *Mechanisms and Control of Mammalian DNA Replication.*

<b>Awards:</b>	National Institutes of Health Molecular Genetics Predoctoral Fellowship	1981-1985
	Stanford University School of Medicine Dean's Fellowship	1986-1987
	National Cancer Institute Tumor Biology Fellowship	1987-1989

**Society & Committee Memberships:**

American Association for Cancer Research

American Association for the Advancement of Science

American Heart Association Review Committee 1994- 2000.

Ad hoc Reviewer for *Journal of Biological Chemistry*, *Biochemistry*, *Cancer Research*, *Clinical Cancer Research*, *Molecular and Cellular Biology*, *Blood*, *Bioconjugate Chemistry* and *Nature Medicine*.

**STUDENT MENTORING:**

Russell Sanderson	Ph.D. Postdoctoral Fellow	2003-2004
Andrew McShea	Ph.D. Postdoctoral Fellow	1996-1997
Mary Horne	Ph.D. Postdoctoral Fellow	1993-1995
Ellen Carmichael	Ph.D. Postdoctoral Fellow	1990-1992
Brian Spain	M.S. Stanford University	1987-1988

**RESEARCH SKILLS:**

Molecular Biology:	All stages of cDNA cloning and sequencing, PCR, Northern and Southern analysis, transcriptional regulation, analysis, and gene expression.
Cell Biology:	Mammalian tissue culture, cell fusion, pathogenic microbiology, immunocytochemistry, in situ transcription, cell cycle separation and FACS analysis.
Tumor Biology:	Tumor and primary cell culture, drug/drug interaction, growth control and apoptosis. Design, development and evaluation of in xenograft efficacy models of human carcinoma and hematologic neoplasia.
Inflammation:	Design, development and evaluation of efficacy studies <i>in vitro</i> and animal models of arthritis, inflammatory bowel disease, pulmonary inflammation and multiple sclerosis.
Protein Chemistry:	Purification: HPLC, FPLC, RP, ion exchange, gel permeation and ligand affinity chromatography; chromato- and isoelectric focusing; synthesis of protein and nucleic acid based matrices, chromogenic and isotopic labeling.
Analysis:	Peptide sequencing, Amino Acid Analysis, PAGE, thin layer, 2-D peptide mapping, rate sedimentation and kinetics. ABI advanced peptide sequencer training.
Drug Development:	Authored preclinical sections to INDs for acytokine anti-inflammatory, a small molecule anti-cancer agent, and multiple antibody and antibody-drug conjugate anti-cancer clinical candidates. Authored numerous SOPs for drug development candidates.

**PREDOCTORAL EMPLOYMENT**

1979-1981	Senior Research Associate, Biochemistry Division, Eastman Kodak Research, Rochester, NY. Development of solid-state immunochemical assays. Purification of serum proteins, antigen/antibody production, biomolecule immobilization on synthetic supports.
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- 1978 Research Technician, U.S. Centers for Disease Control, Albany, NY.  
Developed immunodiagnostics for Legionnaire's disease/Rocky mountain spotted fever.  
Rickettsia cell surface protein isolation and development of solid-phase immunoassays.
- 1976-1977 Area Administrator, National Technical Institute for the Deaf/R.I.T.,  
Rochester NY. Directed a staff of 35 resident advisors to oversee a 2000-person  
residence complex for the hearing impaired.

#### TEACHING EXPERIENCE

- 1990 Adjunct Instructor, Department of Biological Sciences, Wesleyan  
University, Middletown, CT. Instructed graduate course in Oncogenes and  
Growth Factors.
- 1982-1983 Teaching Assistant, Department of Biochemistry, University of  
Rochester Medical Center, Rochester NY. Graduate courses in Biochemistry  
and Advanced Biochemistry.
- 1976-1978 Instructor, National Technical Institute for the Deaf/ R.I.T. Co-developed  
curriculum and instructed leadership training and experiential education courses.

#### PUBLICATIONS

1. A.F. Wahl, J.W. Hockensmith, S.P. Kowalski and R.A. Bambara. (1983) Alternative explanation for excision repair deficiency caused by the polAexI mutation. J. Bacteriology, 155(2):982-986.
2. A.F. Wahl, S.P. Kowalski, L.W. Harwell, E.M. Lord, and R.A. Bambara. (1984) Immunoaffinity purification and properties of a high molecular weight calf thymus DNA-alpha polymerase. Biochemistry 23(9):1895-1899.
3. R.A. Bambara, J.J. Crute and A.F. Wahl. (1985) Is Ap4A an activator of eukaryotic DNA replication? Cancer Investigation. 3:473-479.
4. J.J. Crute, A.F. Wahl, R.A. Bambara. (1986) Purification and characterization of DNA polymerase delta from calf thymus. Biochemistry 25:26-36.
5. J.J. Crute, A.F. Wahl, R. Murrant, R.A. Bambara, S.L. Gibson and R. Hilf. (1986) Inhibition of DNA polymerases in vitro and in vivo by hematoporphyrin derivative and photoradiation. Cancer Research. 46:153-159.
6. J.W. Hockensmith, A.F. Wahl, S. Kowalski and R.A. Bambara. (1986) Purification of calf thymus DNA-dependent ATPase that prefers a primer-template junction effector. Biochemistry 25:7812-7821.

7. A.F. Wahl, J.J. Crute, R.D. Sabatino, J.B. Bodner, R.L. Marraccino, L.W. Harwell, E.M. Lord and R.A. Bambara. (1986) Properties of two forms of DNA polymerase delta from calf thymus. *Biochemistry* 25: 7821-7827.
8. R.L. Marraccino, A.F. Wahl, P.C. Keng, E.M. Lord and R.A. Bambara. (1987) Cell cycle dependent activities of DNA polymerase alpha and delta in Chinese hamster ovary cells. *Biochemistry* 26:7864-7870.
9. S.W. Wong, A.F. Wahl, P.M. Yuan, N. Arai, B.E. Pearson, K. Arai, D. Korn, M. Hunkapiller and T.S.-F. Wang. (1988) Human DNA polymerase  $\alpha$  gene expression is cell proliferation dependent and its primary structure is similar to both prokaryotic and eukaryotic replicative DNA polymerases. *EMBO J.* 7:37-47.
10. A.F. Wahl, A. Moore Geis, Brian H. Spain, W.W. Wong, D. Korn and T.S.-F. Wang. (1988) Gene expression of human DNA polymerase  $\alpha$  during cell proliferation and the cell cycle. *Molecular and Cellular Biology* 8:5016-5025.
11. H.P. Nasheuer, A. Moore, A.F. Wahl and T.S.-F. Wang. (1991) Cell cycle-dependant phosphorylation of human DNA polymerase  $\alpha$ . *J. Biol. Chem.* 266:7893-7903.
12. E.P. Carmichael, J. Roome and A.F. Wahl. (1993) Binding of a sequence-specific single stranded DNA binding factor to the SV40 core origin IR domain is cell cycle regulated. *Molecular and Cellular Biology* 13: 408-420.
13. L. Huang, J. J. Turchi, A.F. Wahl and R. A. Bambara. (1993) Effects of the anticancer drug *cis*-diamminedichloroplatinum (II) on the activities of calf thymus DNA polymerase  $\epsilon$ . *Biochemistry* 32: 841-848.
14. L. Huang, J. J. Turchi, A. F. Wahl and R. A. Bambara. (1993) Activity of Calf Thymus DNA helicase  $\epsilon$  on *cis*- diamminedichloroplatinum (II) damaged DNA. *J. Biol. Chem.* 268: 26731-26737.
15. K. Donaldson, G. Goolsby and A. F. Wahl. (1994) Cytotoxicity of the anticancer agents cisplatin and taxol during cell proliferation and the cell cycle. *Int. J. Cancer* 57: 847-855.
16. K. Donaldson, G. Goolsby, P. A. Kiener and A. F. Wahl. (1994) Activation of p34<sup>cdc2</sup> coincident with taxol-induced apoptosis. *Cell Growth and Differentiation* 5: 1041-1050.
17. G. L. Schieven, A. F. Wahl, S. Myrdal, L. Grosmaire and J. A. Ledbetter (1995) Lineage specific induction of B cell apoptosis and altered signal transduction by the phosphotyrosine phosphatase inhibitor Bis(maltolato) oxovanadium(IV). *J. Biol. Chem.* 270: 20824-20831.
18. P.A. Kiener, P. M. Davis, B. M. Rankin, A. F. Wahl, A. Aruffo and D. Hollenbaugh. (1995) Stimulation of CD40 with purified soluble gp39 induces proinflammatory responses in human monocytes. *J. Immunol.* 155: 4917-4955.



19. A. F. Wahl, K. L. Donaldson, C. Fairchild, F. Y. F. Lee, S. A. Foster, G. W. Demers and D. A. Galloway. (1996) Normal p53 function confers resistance to Taxol by completion of mitosis and induction of G<sub>1</sub> arrest. *Nature Medicine*. 2:72-79.
20. M. C. Horne, G. L. Goolsby, K. L. Donaldson, D. Tran, M. Nuebauer and A. F. Wahl (1996) Cyclin G1 and G2 comprise a new family of cyclins with contrasting tissue specific and cell cycle regulated expression. *J. Biol. Chem*. 271:6050-6061.
21. N. Malik, B. W. Greenfield, A. F. Wahl and P. A. Kiener (1996) Activation of human monocytes through CD40 induces matrix metalloproteinases. *J. Immunol*. 156:3952-3960.
22. C.J. Barnes, A. F. Wahl, M. S. Park, B. Shen and R. A. Bambara (1996) Mechanism of tracking and cleavage of adduct damaged DNA substrates by the mammalian 5' to 3' exo/endonuclease RTH1/FEN1. *J. Biol. Chem*. 271:29624-29631.
23. K.L. Donaldson, A. ScShea and A. F. Wahl (1997) Separation by counterflow elutriation and analysis of T and B lymphocytes in progressive stages of the cell division cycle. *J. Immunol. Meth*. 203:25-33.
24. M. C. Horne, K. L. Donaldson, G. L. Goolsby, D. Tran, M. Mulheisen, J. W. Hell, and A. F. Wahl (1997) Cyclin G2 is upregulated during growth inhibition and B cell antigen receptor-mediated cell cycle arrest. *J. Biol. Chem*. 272:12650-12661.
25. A. McShea, P. L. Richey, K. W. Webster, A. F. Wahl, and M. A. Smith (1997) Cyclin-dependent kinase inhibitor p16 and Alzheimer's Disease: Evidence for reentry into the cell cycle. *Am. J. Path*. 150:1933-1939.
26. A. McShea, P. L. Harris, K. Webster, K., Wahl, A. and Smith, M.A. (1997) Abnormalities of cell cycle control elements in Alzheimer disease. *Neurobiol. Aging*, 18:683-.
27. P. M. Wallace, J. F. MacMaster, T. J. Brown, J. K. Loy, K. L. Donaldson, and A. F. Wahl (1999) Regulation of Inflammatory Responses by Oncostatin M. *J. Immunol*. 162:5547-55.
28. A. McShea, A. F. Wahl, and M. A. Smith (1999) Re-Entry into the cell cycle: A mechanism for neurodegeneration in Alzheimer's Disease. *Med. Hypotheses*. 52:525-527.
29. P. M. Wallace, J. F. MacMaster, T. J. Brown, J. K. Loy, K. L. Donaldson, and A. F. Wahl (1999) Regulation of Inflammatory Responses by Oncostatin M. *J. Immunol*. 162:5547-55.
30. C.J. Bornarth, T.A. Renalli, L.A. Hendrichson, A. F. Wahl and R. A. Bambara (1999) Effect of Flap Modifications on human FEN1 cleavage. *Biochemistry*. 38:13347-13354.
31. A. F. Wahl and K. L. Donaldson (1999) Separation of cells into progressive stages of the cell division cycle by counterflow centrifugal elutriation. *Current Protocols in Cell Biology*, Unit 8.6. (J. Wiley and Sons, New York, NY).

32. M. Jung, A. F. Wahl, W. Neupert, G. Geisslinger, and P. D. Senter (2000) Synthesis and activities of fluorinated derivatives of sulindac sulfide and sulindac sulfone. *Pharm. Pharmacol.* 6:217-221.
33. J. A. Francisco, K. L. Donaldson, D. Chace, C. B. Siegall and A.F. Wahl (2000) Agonistic properties and antitumor activity of the anti-CD40 antibody SGN-14. *Cancer Research* 60:3225-3231.
34. A. F. Wahl, K. L. Donaldson, B. J. Mixan, P. A. Trail and C. B. Siegall (2001) Selective Tumor Sensitization to Taxanes with mAb-Drug Conjugate cBR96-Doxorubicin. *International Journal of Cancer.* 93:590-600.
35. A. F. Wahl and P. M. Wallace (2001) Oncostatin M in the anti-inflammatory response. *Annals of Rheumatic Diseases.* 60:75-80.
36. P. D. Senter, K. S. Beam, B. Mixan and A. F. Wahl (2001) Identification and activities of human carboxylesterases for the activation of CPT-11, a clinically approved anticancer drug. *Bioconjugate Chemistry.* 12: 1074-1080.
37. B.E. Toki, C. G. Cervený, A. F. Wahl, and P.D. Senter (2002) Protease mediated fragmentation of p-amidobenzylethers: A new strategy for the activation of anticancer agents. *Journal of Organic Chemistry,* 67:1866-1872.
38. A. F. Wahl, K. Klussman, J. Thompson, G. Risdon, D. Chace, C. B. Siegall and J. A. Francisco (2002) The anti-CD30 mAb SGN-30 induces apoptosis and affects antitumor activity in models of Hodgkin's Disease. *Cancer Research,* 62: 3736-3742.
39. S. O. Doronina, B. E. Toki, B. Mendelsohn, M. Torgov, C. G. Cervený, D. F. Chace, S. Rejniak, R. DeBlanc, R. P. Gearing, C. B. Siegall, J. A. Francisco, A. F. Wahl, D. L. Myer, and D. D. Senter (2003), Development of potent monoclonal antibody auristatin conjugates for cancer therapy. *Nature Biotechnology,* 21: 778-794.
40. J. A. Francisco, C. G. Cervený, D. L. Meyer, B. J. Mixan, K. Klussman, D. F. Chace, S. Rejniak, K. Gordon, R. DeBlanc, B. E. Toki, C.-L. Law, S. O. Doronina, C. B. Siegall, P. D. Senter and A. F. Wahl (2003) SGN-35, an anti-CD30-monomethyl auristatin E conjugate with potent and selective antitumor activity. *Blood,* 102: 1458-1465.
41. Kerry Klussman, Bruce Mixan, Damon L. Meyer, Peter D. Senter and Alan F. Wahl (2004) Secondary mAb-vcMMAE conjugates are highly sensitive reporters of antibody internalization *via* the lysosome pathway. *Bioconjugate Chemistry,* 15:765-773.
42. Petroziello, J., Yamane, A., Westendorf, L., Thompson, M., McDonagh, C., Cervený, C., Law, C.-L., Wahl, A. and Carter, P. (2004) Suppression subtractive hybridization and expression profiling identifies a unique set of genes over-expressed in non-small cell lung cancer. *Oncogene,* 23:7734-7745.

43. C.-L. Law, C. G. Cervený, K. Klussman, D. F. Chace, K. A. Gordon, D. L. Meyer, S. O. Doronina, C. B. Siegall, P. D. Senter, J. A. Francisco and A. F. Wahl. (2004). Efficient elimination of B-lineage lymphomas by anti-CD20 auristatin conjugates. *Clinical Cancer Research*, 10:7842-7851. (*Feature /Cover Article*)

44. R. J. Sanderson, M. A. Hering, S. F. James, M. M. C. Sun, S. O. Doronina, A. W. Siadak, P. D. Senter, and A. F. Wahl. (2005) *In vivo* drug linker stability of an anti-CD30 dipeptide-linked auristatin immunoconjugate. *Clinical Cancer Research*, 11:843-852 .

45. C. G. Cervený, C.-L. Law, R. S. McCormick, J. S. Lenox, K. J. Hamblett, L. E. Westendorf, A. K. Yamane, J.M. Petroziello, J. A. Francisco and A. F. Wahl. (2005) Signaling via the anti-CD30 mAb SGN-30 sensitizes Hodgkin's disease cells to conventional chemotherapeutics. *Leukemia*, in press.

#### **SUBMITTED**

46. C.-L. Law, K. A. Gordon, J. Collier, K. Klussman, J. A. McEarchern, C. G. Cervený, B. J. Mixan, W. P. Lee, Z. Lin, A. F. Wahl and I. S. Grewal. (2005) Anti-lymphoma activity of the humanized anti-CD40 monoclonal antibody SGN-40.

47. C.-L. Law, K. A. Gordon, A. K. Yamane, M. C. Thompson, J. M. Petroziello, B. E. Toki, C. G. Cervený, M. A. Herring, M. C. Ryan, S. O. Doronina, D. L. Meyer, K. J. Hamblett, J. A. Francisco, P. D. Senter, J. A. Copland, C. G. Wood, and A. F. Wahl. (2005) Renal cell carcinoma expresses the lymphocyte activation antigen CD70, a potential therapeutic target for anti-CD70 antibody-drug conjugates.

#### **PATENT APPLICATIONS**

1. Moore, E. E., Mink, K.A. and Wahl, A. F., (1998) Method for inducing bone and cartilage formation using Mammalian Zcyto7. U. S. Patent Application No. 09/066,027

2. Francisco, J. A., Wahl, A. F. and Siegall, C. B. (2000) Recombinant Anti-CD30 antibody and uses thereof. U.S. Patent Application 09/724,406.

3. J. L. Ellsworth, T. A. Deischer, S.D. Hughes, E. E. Moore, and A. F. Wahl (2000) Novel FGF homologs., U.S. Patent Application No. 96-20C4,

4. C. L. Law, K. Klussman and A. F. Wahl (2001) Recombinant Anti-CD30 Antibody for the treatment of immune disorders. U.S. Patent Application No. 60/331,750.

5. Petroziello, J., Law, C.-L., A.K. Yamane, and Wahl, A.F. (2002) Cancer associated antigens, SGA-56M AND SGA-56Mv, and uses thereof. PCT/US03/28676.

6. Petroziello, J., Law, C.-L., and Wahl, A. F. (2002) SGA-72M, A Cancer associated antigen and uses thereof. WO2004006753.
7. Petroziello, J., Law, C.-L., and Wahl, A. F. (2002) SGA-1M, A Cancer associated antigen and uses thereof. WO03065873.
8. Petroziello, J., Law, C.-L., and Wahl, A. F. (2004) Cancer associated antigens SGA-56M and SGA-56Mv and uses thereof. PCT/US2003/028676.
9. Wahl, A. F., Senter, P.S., Law, C.-L., and Cervený, C. G. (2004) Anti-CD20-antibody drug conjugates for the treatment of cancer and immune disorders. PCT/US 2003/023895.
10. Law, C.-L., Wahl, A. F., Scholler, N. and Pestano, L. A. (2004) Anti-CD70 antibody drug conjugates and their use for treatment of cancer and immune disease. PCT/US2004/ 073656 A2.
11. Law, C.-L., McEarchern, J., and Wahl, A.F. Anti-CD70 antibody and its use for the treatment of cancer and autoimmune disorders. US provisional application 60/619,018.

#### Issued Patents

12. Siegall, C.B., Wahl, A. F., Francisco, J.A. and Fell, H.P. (2005) Methods for the treatment and prevention of cancer using anti-CD40 antibodies. US patent # 6,838,989 B1.
13. Siegall, C.B., Wahl, A. F., Francisco, J.A. and Fell, H.P. (2005) Nucleic Acids encoding anti-CD40 proteins and methods of producing anti-CD40 proteins. U.S. patent # 6,838,261 B1.

#### **INVESTIGATIONAL NEW DRUG APPLICATIONS**

Supervised research and coauthored pre-clinical sections for the following approved INDs:

BSM-196854. A recombinant human cytokine for the treatment of immune and inflammatory disease. Bristol Myers Squibb Company  
SGN-15. A chimeric monoclonal antibody- drug conjugate for the treatment of solid tumors. Seattle Genetics, Inc.  
SGN-30. A chimeric monoclonal antibody for the treatment of hematologic malignancies. Seattle Genetics, Inc.  
SGN-40. A humanized monoclonal antibody for the treatment of hematologic malignancies. Seattle Genetics, Inc.

**SELECTED ABSTRACTS (from >50) & INVITED PRESENTATIONS\***

1. A.F. Wahl, S.P. Kowalski, L.W. Harwell, E.M. Lord and R.A. Bambara. Isolation of DNA polymerase alpha from calf thymus. Annual Meeting of the American Society of Microbiology, 1984.
2. A.F. Wahl, S.P. Kowalski, L.W. Harwell, E.M. Lord and R.A. Bambara. Immunoaffinity purification of DNA polymerase alpha from calf thymus. Proceedings of the American Association for Cancer Research, 1984.
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